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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/054,374

01/22/2002

Gerard J. Sullivan

Honeywell No.

5884

A11-26110US

EXAMINER

ZARNEKE, DAVID A

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 11/07/2003

7590 11/07/2003
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,374

Applicant(s)

SULLIVAN ET AL.

Examiner

David A. Zarneke

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20-28 is/are pending in the application.
- 4a) Of the above claim(s) 20-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 10-13, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Distefano et al., US Patent 5,834,339.

Distefano teaches a system for stacking platelets (Figure 2F), comprising in combination:

a slotted file (285); and

a plurality of platelets (280) which fit into the slotted file wherein no pressure is required to hold the platelets within the slotted file.

Regarding claim 2, Distefano teaches the slotted file has at least three walls (Figure 2F).

With respect to claim 4, Distefano teaches the slotted file has at least two side walls and at least one back wall (Figure 2F).

As to claim 10, Distefano teaches the at least one back wall is connected to an end of each of the at least two side walls to form a "U" shape (Figure 2F).

In re claim 11, Distefano teaches the plurality of grooves on the at least two side walls face directly across from each other (Figure 2F).

Regarding claim 12, Distefano (Figure 2D) teaches the plurality of platelets is comprised of a semiconductor chip (200) placed into a chip carrier (280).

With respect to claim 13, Distefano (Figure 2D) teaches the chip carrier has a floor (225) and a frame (280).

As to claim 17, Distefano (Figures 2D & 2G) teaches the floor (225) has a plurality of electrodes (pads under 210).

In re claim 18, Distefano teaches the semiconductor chip is placed face down on the floor contacting the plurality of electrodes (Figures 2D & 2G).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Distefano et al., US Patent 5,834,339, as applied to claims 1 and 2 above, and further in view of Vafai, US Patent 6,457,515.

Vafai teaches the use of silicon as a heat sink material (2, 51+).

The substitution of one known equivalent technique for another may be obvious even if the prior art does not expressly suggest the substitution. Ex parte Novak 16 USPQ 2d 2041 (BPAI 1989)*, In re Mostovych 144 USPQ 38 (CCPA 1964), In re Leshin 125 USPQ 416 (CCPA 1960)., Graver Tank & Manufacturing Co. V. Linde Air Products Co. 85 USPQ 328 (USSC 1950).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the Si of Vafai as the heat sink wall material of Johnson because Vafai teaches that Si is a suitable heat sink material.

Regarding claim 5, while Johnson teaches the sidewalls (44 & 46) as having a plurality of grooves (40 & 42), Johnson fails to teach the grooves as being etched.

It would have been obvious to one of ordinary skill in the art at the time of the invention to etch the grooves of Johnson because etching is a suitable and commonly used method of forming openings/grooves in materials.

The use of conventional materials or methods to perform there known functions in a conventional process is obvious. In re Raner 134 USPQ 343 (CCPA 1962).

With respect to claims 6-9, it would have been obvious to one ordinary skill in the art at the time of the invention to optimize the depth and spacing of the grooves to meet standard requirements (MPEP 2144.05(b)).

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Distefano et al., US Patent 5,834,339, as applied to claims 1 above, and further in view of King et al., US Patent 5,140,405.

Distefano fails to teach the details of the floor and frame recited in claims 14-16.

Regarding claim 14, the use of ceramic as the material of which the floor and frame of a chip carrier are made is conventionally known in the art. barring a showing of unexpected results, the use of conventional materials to perform there known functions in a conventional process is obvious. In re Raner 134 USPQ 343 (CCPA 1962).

With respect to claim 15, King teaches a semiconductor assembly comprising a chip carrier having a floor (40) and a frame (42), wherein the floor extends beyond the edges of the frame to form flanges (Figure 6).

Regarding claim 16, King teaches the flanges as fitting into the grooves of a motherboard or other application (1, 31+). While not specifically stating its use in a stacked chip module, one of ordinary skill in the art would know that the "other applications" referred to would include stacked chip modules.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the invention of King in the invention of Distefano because the use of ceramic, the forming of flanges and the insertion of the flanges into a slotted file are all an obvious matter of design choice. Design choices and changes of size are generally recognized as being within the level of ordinary skill in the art (MPEP 2144.04(d)).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kinsman, US Patent 6,507,109, and Farrand, US Patent 3,614,541 are both cited as teaching invention similar to the one in the present claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

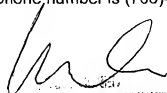
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Zarneke whose telephone number is (703)-305-3926. The examiner can normally be reached on M-F 10AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (703)-308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-6789.


David A. Zarneke
October 29, 2003


KAMAND CUNEO
SUPERVISOR